ATOMIC ENERGY newsletter®

A SERVICE FOR INDUSTRY BUSINESS ENGINEERING AND RESEARCH
ROBERT M. SHERMAN, EDITOR. PUBLISHED BI-WEEKLY BY ATOMIC ENERGY NEWS CO., 1000 SIXTH AVENUE, NEW YORK 18, N. Y.

Dear Sir:

June 21, 1960
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U.S. Court of Appeals in 2-1 decision last week set aside provisional permit issued by USAEC to Power Reactor Development Co., Detroit, for construction of the Enrico Fermi 100 emw fast-breeder nuclear power plant at Lagoona Beach, Mich. The District of Columbia court decision followed legal action by three AFL-CIO unions which contended the plant would be a public hazard. USAEC position was that the construction permit was provisional, and an operating license would not follow until Commission was satisfied that plant could be operated safely. The Court's basic holding was that the Commission must make a firm finding of safety before permitting construction rather than when an operating permit is to be issued. Meanwhile the $88 million plant is 60% completed with start-up scheduled for mid-1961; it is an undertaking of 14 public utilities and 7 equipment manufacturers, with Detroit Edison at forefront. Immediate steps are being taken by the USAEC since the ruling might also affect other power reactors under construction. (Other BUSINESS NEWS, p. 2 this LETTER.)

High Voltage Engineering Corp., Burlington, Mass., has acquired Applied Radiation Corp., Walnut Creek, Calif., in an exchange of stock. Some 42,000 shares of High Voltage stock with current valuation of about $5,700,000 were involved in the transaction. High Voltage gave one share of its stock for each 10 3/4 shares of Applied Radiation stock. Archer-Daniels-Midland, which had held approximately one-third of the Applied Radiation stock, retains its ownership interest in the combined operation. Applied Radiation designs and manufactures microwave linear and Cockroft-Walton accelerators. High Voltage has sold over 200 particle accelerators in its 14 years of doing business. (Other FINANCIAL NEWS, p. 2 this LETTER.)

New unit has been established by Thiokol Chemical Corp. at Parsipanny-Troy Hills, N.J., for research and study of nuclear propulsion for space travel. The new group will accelerate nuclear propulsion research that has been conducted for several years by the company's Reaction Motors division at Denville, N.J. The work is in connection with the company's development of large solid boosters with sufficient power to launch heavy space vehicles and with controllable liquid systems as a source of energy for soft landings on lunar probes. (Other MANUFACTURERS' NEWS, p. 5 this LETTER.)

A substantial part of Corning Glass Works' interest in Sylvania-Corning Nuclear Corp. has been sold to Sylvania Electric Products, Inc. Sylvania and Corning Glass had been 50-50 owners of the Bayside, L.I., company which does research, development and production of fuels for nuclear reactors. (Other PRODUCT NEWS, p. 5 this LETTER.)

Contract for the fast neutron irradiation of artificial and natural graphite has been received by the Atomic Power Equipment Department of General Electric Co., San Jose, Calif., from the North Rhine-Westfalia's Institute for Reactor Materials. The institute is a division of GFKF, nuclear energy research agency supported jointly by the state of North Rhine-Westfalia and the Federal Republic of Germany. (Other CONTRACT NEWS, p. 3 this LETTER.)

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ATOMIC ENERGY BUSINESS NEWS...

U.S. FIRM TO DISTRIBUTE BRITISH INSTRUMENTS: Picker X-Ray Corp., White Plains, N.Y., in an agreement with Associated Electrical Industries, Ltd., London, will be the U.S. agent for A.E.I.'s nuclear instruments, mass spectrometers, and other electronic devices. Picker sales and service outlets in the U.S. and abroad have been long established for the company's line of medical and industrial x-ray apparatus and radiation detection devices. Picker X-Ray is a subsidiary of C.I.T. Financial Corp., largest independent consumer and industrial financing organization in the U.S.

SALINE WATER CONVERSION PLANT NOT TO HAVE REACTOR AS HEAT SOURCE: The 40 thermal mw process heat reactor which had been planned for the Point Lomas, San Diego, Calif. saline water conversion plant will not be used. Instead a conventional heat source will be installed since the USAEC's advisory committee on reactor safeguards has ruled out the use of reactor due to the location's smog and harbor pollution problems. Interior Department and state of California will share costs on 50-50 basis. (Meanwhile, the joint program of the USAEC and Interior Department to build saline water conversion plant using reactor as heat source has not been abandoned. The combination will be attempted at one of the three other plants Interior Department will build using different conversion methods. Roswell, N.M., and Webster, N.D., are sites for two plants; third will be on the East coast.)

BRITISH FIRMS GET ATOMIC ENERGY AUTHORITY COLLABORATION: First two British chemical engineering firms have signed collaboration and license agreements with the U.K. Atomic Energy Authority. Agreements are first since the Authority's decision in 1957 to collaborate with members of the British Chemical Plant Manufacturers' Association who desired to enter the nuclear chemical field; they were with W. J. Fraser & Co., Ltd., and Nuclear Chemical Plant, Ltd., the latter being the company formed in 1958 by Power-Gas Corp., Ltd.; Humphreys & Glasgow, Ltd.; and John Thompson, Ltd. The collaboration and license agreements now concluded cover plant and processes connected with the production of uranium metal billets from uranium ore concentrates and the reprocessing of irradiated nuclear fuel elements. It is believed the agreements will enable the firms to better compete for export business in the design and manufacture of radioactive chemical processing plant. Under the agreements, the Authority receives royalties in return for its grant of license covering its patents held; general advice on technical problems; assistance in commissioning and training related to particular plants to be built by the companies; and information on current and future significant work in the field.

INSTRUMENT COMPANY IN MOVE: In an expansion move, Radiation Instrument Development Laboratory, Inc., has moved its engineering, sales and general office to Northlake, Ill. The firm's manufacturing, purchasing and testing remain at its original plant in Chicago. It is intended to add to the engineering staff in the expanded quarters. The company designs and manufactures a full line of instruments for detection and measurement of radioactivity.

DECREASE IN NUCLEAR PLANT SPENDING: Survey by USAEC of costs for quarter ending March 31, 1960 of nuclear reactor projects underway in the U.S. shows $44 million spent for twenty-two electric power prototypes and experiments. Some $27 million of this represented investment by publicly and privately owned utilities, decrease of about $10 million from the preceding quarter. Balance of $17 million was cost supported by the USAEC, a slight increase over the prior quarter. Most of the utility costs were for plant and equipment; those of the Commission were about half for research and development and half for plant and equipment and fuel. Projects covered by the survey included USAEC spending of about $1.1 million on the nuclear ship Savannah. The survey also showed that total estimated costs for some 55 civilian reactor projects now actively under design or construction are about $928 million, of which about $421 million had been incurred as of March 31, 1960 and about $507 million remained to be incurred.

CHARGES SET FOR RADIOACTIVE WASTE DISPOSAL: Charges for land burial of radioactive waste at Oak Ridge, Tenn., and Arco, Idaho, have been set by USAEC at 70¢ cu. ft. for packaged low-level wastes with a minimum charge of $21 for batches consisting of 30 cu. ft. or less. Charges are f.o.b. sites. Although subject to adjustment, the Commission intends to maintain them as stable as possible.

ATOMIC ENERGY CONTRACT NEWS...

PROPOSALS ASKED: Proposals have been asked by the USAEC's St. Louis area office for purchase and removal of residues consisting of uranium-bearing scrap material accumulated by the Commission during its uranium refining activities at the Destrehan St. Plant, St. Louis, Mo., (Mallinckrodt Chemical Co.-operated). Offered are approximately 74,000-tons of pitchblende raffinate resulting from processing Belgian Congo pitchblende together with other uranium concentrates. Also offered are approximately 32,500-tons of Colorado raffinate resulting from processing primarily domestic uranium concentrates. In addition there are offered 1,500-tons of unleached barium sulfate cake, and leached barium cake resulting from the refinery operation. Full details of the proposals which should be made before Sept. 10, 1960 may be obtained from the USAEC, P.O. Box 470, St. Charles, Mo.

CONTRACTS AWARDED: New facility, to be known as the High Radiation Level Examination Laboratory, is to be built at Oak Ridge National Laboratory, Tenn., under contract awarded Kaminer Construction Corp., Chamblee, Ga., on its low bid of $2,649,200. The laboratory will provide facilities for more extensive research on development of economic fuels and materials for power and test reactors. It will consist essentially of 13 "hot cells" and will supplement present facilities at the Laboratory. It will be used for metallurgical and metallographic studies on materials such as fuels, blankets, test loop specimens, and reactor components. Much of the research will be on radiation, mechanical and thermal effects on materials, such as various alloys used in reactor fuel elements.

Contract in amount of $765,201 has been awarded Cementation Co. of America, Inc., Wilmington, Dela., by USAEC's Albuquerque, N.M. office for excavation and construction work required for Project Gnome at the salt flats near Carlsbad, N.M. Project Gnome will see an underground charge detonated as part of the Commission's plan to investigate the use of nuclear explosives for commercial purposes.

On bid of $667,000 Foster & Creighton Co., Nashville, Tenn., were awarded USAEC contract to construct a building at Oak Ridge National Laboratory to house new particle accelerator. This will be a 10 million electron-volt tandem Van de Graaff positive-ion accelerator. The structure will adjoin the present high voltage laboratory which houses two smaller Van de Graaff machines. Architect-engineer work on the job is being done by Catalytic Construction Co., Philadelphia.

ATOMIC ENERGY PATENT & TRADE-MARK DIGEST...

PATENTS ISSUED June 7, 1960 to PRIVATE ORGANIZATIONS AND/OR INDIVIDUALS: (1) Method of quality control of catalysts by radiation scatter measurement. Ewing L. Gunn, inventor. No. 2,939,960 assigned to Esso Research & Engineering Co., Elizabeth, N.J. (2) Printing plates for addressing machines for use with X-ray photography. Arne Andersson, inventor. No. 2,939,958 assigned to Jarnhs Elektriska AB., Stockholm, Sweden. (3) Nuclear switch construction and method. John H. Coleman, inventor. No. 2,939,961 assigned to Radiation Research Corp. (4) Linear electron accelerators. Wilson S. Geisler, Jr., inventor. No. 2,940,000 assigned to Applied Radiation Corp., Walnut Creek, Calif. (5) Electron accelerator. Richard F. Post, inventor. No. 2,940,001 assigned to Applied Radiation Corp., Walnut Creek, Calif.

PATENTS ISSUED June 7, 1960 to GOVERNMENTAL ORGANIZATIONS: (1) Automatic counter. Herman P. Robinson, inventor. No. 2,939,633 assigned to USAEC. (2) Reversible radiation-dosimeter. Henry Linchitz, inventor. No. 2,939,959 assigned to Secretary of the Army. (3) Method of impregnating a porous material. Gordon N. Steele, inventor. No. 2,939,803 assigned to USAEC.

PATENTS ISSUED June 14, 1960 to PRIVATE ORGANIZATIONS AND/OR INDIVIDUALS: (1) Zirconium tetrachloride production. John W. Andersen, inventor. No. 2,940,826 assigned to Monsanto Chemical Co., St. Louis, Mo. (2) Thermal column for a nuclear reactor. Harvey P. Sleeper, Jr., inventor. No. 2,940,916 assigned to General Dynamics Corp., New York.

PATENTS ISSUED June 14, 1960 to GOVERNMENTAL ORGANIZATIONS: (1) Concentration process for plutonium ions in aqueous acid solution. Glenn T. Seaborg, Stanley G. Thompson, inventors. No. 2,940,819 assigned to USAEC. (2) High temperature, high power heterogeneous nuclear reactor. Roland P. Hammond, Harold M. Busey, Walter R. Wykoff, inventors. No. 2,940,915 assigned to USAEC.

TRADE-MARK NEWS: Trade-mark "Nuclear-Chicago" (SN-41,711) will be issued Nuclear-Chicago Corp., Chicago, Ill., for devices used in the detection and measurement of radioactivity.

NEW BOOKS & OTHER PUBLICATIONS...

Soviet Nuclear Propulsion. R. G. Perelman. Survey of accomplishments in this field. 46 pages.--Triumph Publishing Co., 1414 Monroe St., N.W., Wash., D.C. ($2.85)

Gas Cooled Reactors. Proceedings of two-day conference jointly sponsored by The Franklin Institute and the Delaware Valley Section of American Nuclear Society, February 10-11, 1960. Monograph No. 7.--Franklin Institute, 20th and Parkway, Phila. 3, Pa. ($5.00)

Symposium on Equipment Manufacturing and Development Problems for Nuclear Power Systems. Proceedings of conference held April 19-20, 1960 under sponsorship of Atomic Energy of Canada, Ltd., Chalk River, Ontario. No. AECL-990.--Atomic Energy of Canada, Ltd., Scientific Document Office, Chalk River, Ont. ($2.00)

Status Report on Boiling Water Reactor Technology as of 1959. No. TID-8518, Book 5.(60¢).....Status Report on Organic-Cooled Power Reactors as of 1959. No. TID-8518, Book 7. ($2.25). First two volumes of the eight which comprise the USAEC's four-part study of the U. S. civilian power reactor program.--Superintendent of Documents, Wash. 25, D.C.

Radioisotopes in Industry. John P. Danforth, Robert P. Stapp, editors. Outline of program to teach professional industrial people basic considerations in applications of radioisotopes to industrial work; in two volumes. Vol. 1, 688 pages. Vol. II, 837 pages.--General Motors Corp. Research Laboratories, Warren, Mich. ($10 for set of two volumes)

Nuclear Rocket; New Powerplant for Space Vehicle Propulsion. Howard R. Schmidt, Ralph S. Decker, nuclear rocket section, division of reactor development, USAEC. No. TID-8520. 39 pages. (50¢).....Thermoelectric Nuclear Fuel Element; 3rd quarterly progress report, Jan. 10, 1960. G. R. Kilp, et al, atomic power department, Westinghouse Electric Corp., Pittsburgh, Pa. No. WCAP-1376. 29 pages. ($1.00) --Office of Technical Services, Wash. 25, D.C.

Tritium: Dosage, Preparation of Labeled Molecules and Biological Applications. In French, with summaries in English, Russian and Spanish. 56 pages. ($1.00)..... Electronic Equipment Used in the Nuclear Energy Industry in France. In French with summaries in English, Russian and Spanish. 59 pages. ($1.00).....Heavy Water Lattices. In English only. ($1.50).--International Atomic Energy Agency, Publications Sales Unit, Vienna I, Austria.

NOTES: Lists No. 53 (April, 1960) and No. 54 (May, 1960) of the U. K. Atomic Energy Authority include original documents and translations the Authority has issued together with articles in periodicals contributed by staff members. List may be obtained from Librarian, A.E.R.E., Harwell, Berkshire, England.

MEETINGS, COURSES, CONFERENCES...

CONFERENCES: Conference on medium and small reactors is scheduled for September 5-7, 1960, in Vienna under auspices of International Atomic Energy Agency. Emphasis will be on applications in undeveloped countries.

Radioisotopes in Physical Sciences and Industry is conference planned for Sept.16-17 in Copenhagen, under IAEA sponsorship, and with cooperation of UNESCO.

SYMPOSIA: Thermonuclear plasma physics symposium will be sponsored by Oak Ridge National Laboratory and Institute of Nuclear Studies, Aug. 22-26, 1960 at Gatlinburg, Tenn. The elementary aspects of controlled fusion will be covered for university faculty members who have little familiarity with the subject. Details may be obtained from D. D. Cowen, ORNL, P.O. Box X, Oak Ridge, Tenn.

Some four symposia are planned by the International Atomic Energy Agency. Symposium on Selected Topics in Radiation Dosimetry is scheduled for June 7-11, in Vienna. Symposium on Effects of Ionizing Radiation on Seeds and its Significance on Crop Improvement is planned for Aug. 8-12, in Karlsruhe. Symposium on Inelastic Scattering of Neutrons in Solids and Liquids will be held Oct. 11-14, in Vienna. And Symposium on Chemical Effects of Nuclear Transformations is planned for Oct. 24-27, in Prague.

PEOPLE...in atomic energy work...

Five U. S. physicists will receive the USAEC's Lawrence Memorial Award for 1960: Harvey Brooks, John S. Foster, Jr., Isadore Perlman, Norman F. Ramsey, Jr., and Alvin M. Weinberg. The awards, consisting of $5,000 to each recipient, are for meritorius contributions to the development, use or control of atomic energy.

NEW PRODUCTS, PROCESSES, INSTRUMENTS...

NEW PRODUCTS: Alpha hand monitor, Model AHM-11, provides completely automatic detection and measurement of alpha contamination on the back and palm of each hand. To operate, both hands are placed in the waist-high hand openings; if either hand is removed during the counting period, warning light will show and cycle will automatically stop. Instrument has wide range of scaling factors and counting times allowing flexibility in establishing permissible levels.--Technical Associates, Burbank, Calif.

New ratemeter-spectrometer, Model SC-80, is a single channel combination incorporating high voltage power supply, linear amplifier, pulse height analyzer, and precision ratemeter. As an optional feature it may be provided with four-speed threshold drive for automatic spectrum scanning....Dual ratemeter with all-transistor circuitry is offered for research, industrial and reactor monitoring applications. A 9"x19"x16" cabinet contains high and low voltage power supplies and accepts two plug-in ratemeter modules with either log or linear response. This permits the user to choose any one of three combinations: log-log, log-linear or linear-linear. The instrument may be operated either with dual detectors or with a single detector, simultaneously feeding the dual ratemeters.....New radiochemical compound, caffeine-C-14, is now commercially available from this firm. It should be of value to medical and biochemical research people in studies of cardiac, respiratory and psychic functions.--Tracerlab, Inc., Waltham 54, Mass.

Aluminum plus boron or rare earth oxides, useful control material for nuclear reactions, is now available from this producer in pure, homogeneous and easily workable form. The composite materials, produced by an advanced powder metallurgy technique, are said to rival pure aluminum in ductility. As an example of this ductility the firm cites its Binal, boron carbide uniformly dispersed in an aluminum matrix, which can be produced in continuous strip form and may be wound into coils and cylinders, or fabricated into other shapes.--Sintercast Div., Chromalloy Corp., Yonkers 2, N.Y.

PRODUCT NEWS: Production of zirconium sponge will be resumed by Columbia-National Corp. at its plant near Pensacola, Fla., after a five-month shutdown. The operation was closed last December after the quality of the sponge produced at the plant was questioned by the Navy and the USAEC, the firm's government customers. Columbia-National, subsidiary of Columbia-Southern Chemical Corp., has USAEC contract to supply 700,000 lb. per year of the sponge until June 30, 1963.

REACTOR NEWS: Nuclear research reactor of 10 thermal kw capacity will be furnished Cornell University, Ithaca, N.Y., by General Atomic division of General Dynamics Corp. It will be part of a unit at Cornell which will include a zero ppwer reactor and other facilities. Vitro Engineering Co., New York, as architect-engineers and consultants, will design the Cornell building in detail....Second research reactor is being built by General Atomic for its own research laboratory at San Diego, Calif. Designated Flair, it will be a tank type reactor, light water cooled and moderated by zirconium-hydride and water. It is designed to operate continuously at a power level of 1.5 megawatts and at levels over this for short periods of time.

Nuclear reactor for student training and research will be built for the University of Maryland, College Park, by Allis-Chalmers Mfg. Co., Milwaukee, Wisc. It will be of the pool-type, with 10 kw capacity.

Ten watt nuclear research reactor is being moved from the Vanowen to the Desota facility of Atomics International at Canoga Park, Calif. The reactor uses as fuel a solution of uranyl sulfate containing enriched uranium; it is moderated by light water.

MANUFACTURERS' LITERATURE: Physical, chemical, radiation, mechanical, and electrical properties of typical graphite are discussed in brochure available from Great Lakes Carbon Co., 333 No. Michigan Ave., Chicago, Ill.

Sincerely,

The Staff,
ATOMIC ENERGY NEWSLETTER

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